



CHAPTER 9: Consciousness

<http://www.youtube.com/watch?v=8x-nQ-vPw5k&feature=related>

Consciousness

Attentional Processes

Sleep and Dreams

Hypnosis

Consciousness-Altering Drugs

Consciousness and Control

ATTENTIONAL PROCESSES

- **Consciousness**
 - An awareness of the sensations, thoughts, and feelings (external stimuli & one's own mental activity) that one is attending to at a given moment.
- **Attention**
 - A state of awareness consisting of the sensations, thoughts, and feelings that one is focused on at a given moment.

ATTENTIONAL PROCESSES

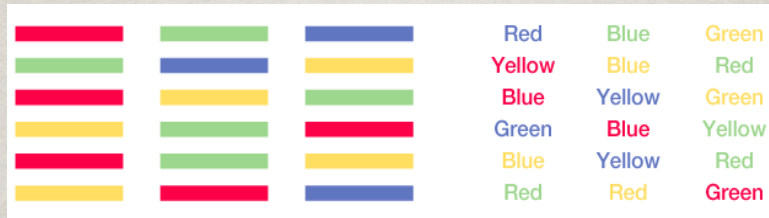
SELECTIVE ATTENTION

- **Selective Attention**
 - Ability to focus awareness on a single stimulus to the exclusion of other stimuli.
- **Cocktail Party Phenomenon**
 - Ability to attend selectively to one person's speech among competing conversations.

ATTENTIONAL PROCESSES

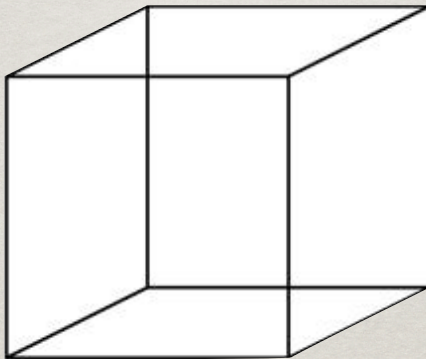
DIVIDED ATTENTION

THE STROOP TEST



- In the left-hand task, name each color as fast as you can.
- In the right-hand task, name the color of ink in which each word is printed as fast as you can.
- Which task is harder?

NECKER CUBE



Can you hold only one orientation of the cube. For many it “flips” from one orientation to the other.

ATTENTIONAL PROCESSES

INFLUENCE WITHOUT AWARENESS

Examples:

- **Subliminal Message**

- A stimulus that is presented below the threshold for awareness.

✿ Mere Exposure

- **Priming**

- Tendency for a recently presented word or concept to facilitate responses in a subsequent situation.
- <http://www.youtube.com/watch?v=EUA4Q5aoG74>

SLEEP AND DREAMS

THE SLEEP-WAKE CYCLE

- **Biological Rhythm**

- Any periodic fluctuation in a biological organism.

- **Circadian Rhythm**

- A biological cycle that occurs approximately every twenty-four hours, e.g., sleeping and waking.

✿ This rhythm can be disrupted when one travels.

✿ Jet lag is worse when people travel eastward.

SLEEP AND DREAMS

NIGHT WORK, SLEEPING, AND HEALTH

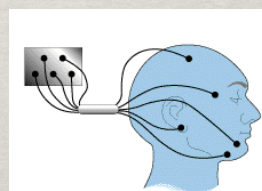
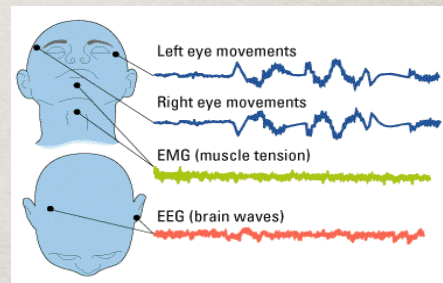
- ☼ Shift work (rotating day and night shifts) is more dangerous than night work.
- ☼ About 200,000 traffic accidents a year are sleep related.
- ☼ Those who drive in the middle of the night take **microsleeps**
 - Brief episodes of sleep that occur in the midst of a wakeful activity.
- ☼ Both caffeine and a nap can help drivers stay awake.

SLEEP AND DREAMS

THE STAGES OF SLEEP

• *Measuring Sleep*

- ☼ Electrodes measure
 - ☼ eye movements
 - ☼ EMG measures
 - ☼ muscle tension
 - ☼ EEG measures
 - ☼ brain waves
- ☼ A camera may also record body movements.



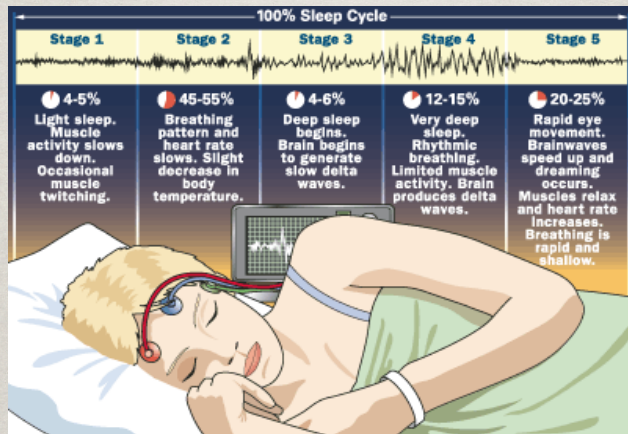
BRAIN WAVES AND SLEEP STAGES

■ Alpha Waves

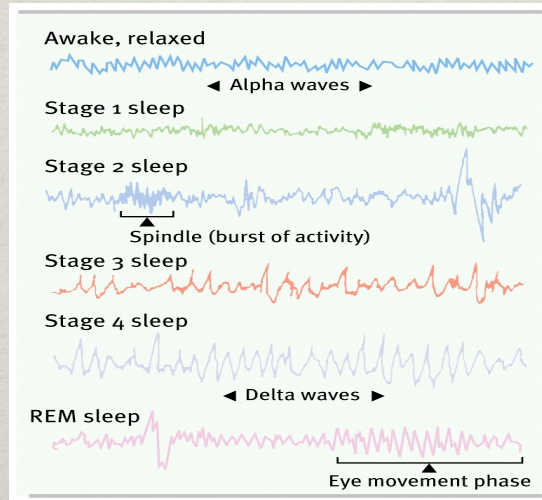
- slow brain waves of a relaxed, awake state

■ Delta Waves

- large, slow waves of deep sleep



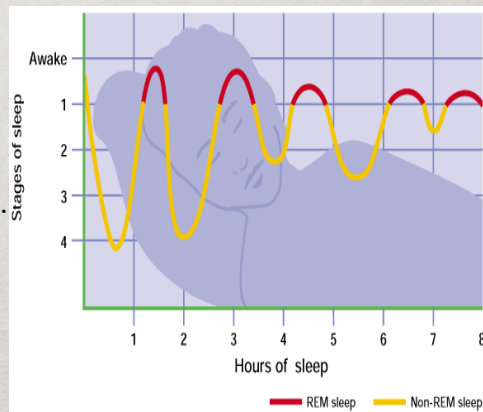
BRAIN WAVES AND SLEEP STAGES



SLEEP AND DREAMS THE STAGES OF SLEEP

- Typically 4-5 episodes of REM (rapid eye movement) sleep per night occur.
- Later episodes are longer and farther apart.
- Most "deep sleep" (stages 3 & 4) occurs early in the night.

A Typical Night's Sleep



SLEEP AND DREAMS

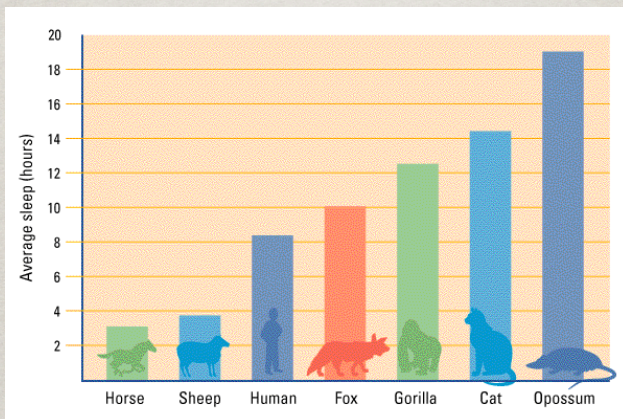
WHY DO WE SLEEP?

- ☼ Two main theories are proposed to explain why people sleep.
- ☼ Restoration theory states that sleep enables people to recover from the day's physical, cognitive, and emotional events.
- ☼ Circadian theory, based on the evolutionary significance of sleep, proposes that sleep evolved over time to conserve energy and keep organisms safe from predators.

SLEEP AND DREAMS

WHY DO WE SLEEP?

Cross-species Comparisons of Daily Hours of Sleep

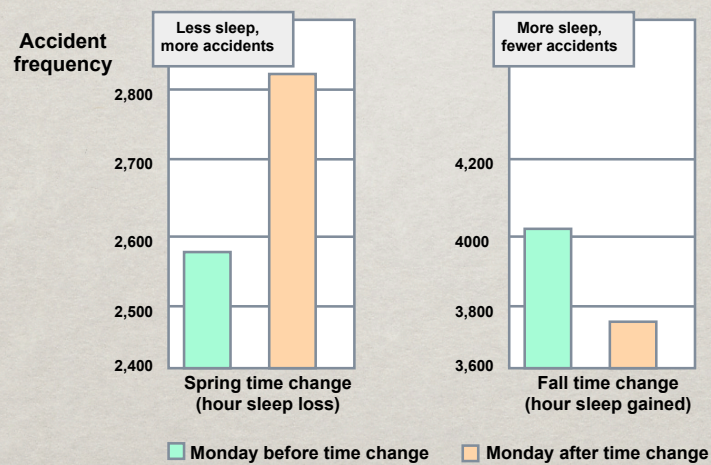


SLEEP DEPRIVATION

■ Effects of Sleep Loss

- fatigue
- impaired concentration
- immune suppression
- irritability
- slowed performance
 - accidents
 - planes
 - autos and trucks

SLEEP DEPRIVATION



SLEEP DEPRIVATION

Are You Sleep Deprived?

1. Need an alarm clock in order to wake up at the appropriate time.
2. It's a struggle for me to get out of bed in the morning.
3. Weekday mornings I hit the snooze bar several times to get more sleep.
4. I feel tired, irritable, and stressed out during the week.
5. I have trouble concentrating and remembering.
6. I feel slow with critical thinking, problem solving, and being creative.
7. I often fall asleep watching TV.
8. I often fall asleep in boring meetings or lectures or in warm rooms.
9. I often fall asleep after heavy meals or after a low dose of alcohol.
10. I often fall asleep while relaxing after dinner.
11. I often fall asleep within five minutes of getting into bed.
12. I often feel drowsy while driving.
13. I often sleep extra hours on weekend mornings.
14. I often need a nap to get through the day.
15. I have dark circles around my eyes.

Common Sleep Paralysis (CSP)

1. Most adults will have an episode of CSP every few years.
2. lasts between 15 sec to a minute
3. While asleep, hormones...
 - are released causing paralysis & keep it from acting out dreams
 - wear off before dream is done & wake functioning

Can sometimes, rarely, still suppress motor skills & the body is still paralyzed when woken

THE “OLD HAG”

Hallucinatory sleep paralysis (HSP)

- ♦ terrifying, helpless
- ♦ HSP seems to affect an area much like an epidemic, a region that has had no reports may suddenly be inundated
- ♦ HSP also seems to run in families
- ♦ Any way to stop it?



- ♦ Don't sleep on your back
- ♦ Almost all attacks have been reported by people sleeping on their backs

OLD HAG SLEEP FILE

- ♦ Show video
- ♦ Or.... Dramatic reenactment
- ♦ Pictures associated with the Old Hag

SLEEP AND DREAMS

SLEEP DISTURBANCES

- **Insomnia**

- Inability to fall asleep, stay asleep, or get enough sleep to function during the day

- ⌘ Overcoming insomnia

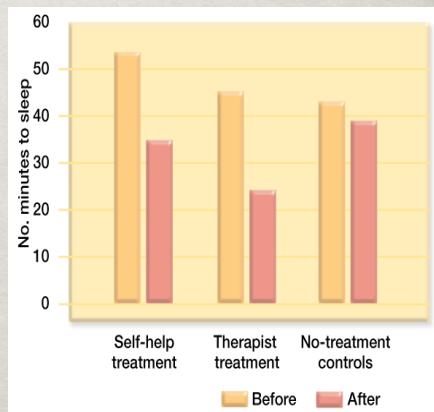
- ⌘ Do not nap during the day.
 - ⌘ Avoid alcohol, caffeine, and cigarettes within five hours of bedtime.
 - ⌘ Avoid exercise within two hours of bedtime.
 - ⌘ Keep a rigid schedule.
 - ⌘ If awake and anxious, leave bed and return when sleepy.

SLEEP AND DREAMS

SLEEP DISTURBANCES

Self-Help Benefits for Insomnia

- **People with insomnia received a self-help program, the program and care from a therapist, or no treatment.**
- **People who only participated in the program did as well as those who saw a therapist. People can help themselves overcome insomnia.**



SLEEP AND DREAMS

SLEEP DISTURBANCES

- **Narcolepsy**
 - Characterized by irresistible and sudden attacks of REM sleep during the day
- ✿ Parasomnias
 - **Sleep Apnea**
 - ✿ Repeated cessation of breathing during sleep
 - **REM sleep behavior disorder**
 - Condition in which skeletal muscles are not paralyzed during REM sleep.

DREAMING



“Dreams are the royal road to a knowledge of the unconscious activities of the mind”

WISH FULFILLMENT

- ◆ Do dreams fulfill wishes and desires that you may not know you have?

Or ... are they meaningless & random?



SLEEP AND DREAMS

DREAMS

- ⦿ Psychologists used to believe that dreaming occurred infrequently.
- ⦿ Now they believe that REM sleep and dreaming are biologically adaptive.
 - ⦿ Animal Data
 - ⦿ REM rebound
- ⦿ In fact, there is evidence that they are important for brain maturation.
 - ⦿ In newborns, 50% of sleep is REM sleep.
 - ⦿ Later in childhood and adulthood, about 20% of sleep is REM sleep.

WHY DREAM?



- ♦ **Housekeeping** –body does repairs; replaces cells
- ♦ **Sort & store** – catalog & inventory memories
- ♦ **Safety valves** – buried emotions come out!

DREAM THEORIES

Random Activation

- ♦ Brain creates dreams by electrical activity - “exercising”
- ♦ Dreams have nothing to do with your daily life

SLEEP AND DREAMS

ACTIVATION-SYNTHESIS THEORY

- ✿ A more neuropsychological approach to understanding dreams is the **Activation-synthesis theory**.
- Dreams result from the brain's attempt to make sense of random neural signals that fire during sleep.

DREAM THEORIES

Test run

- ♦ Run through scary situations in your dreams to prepare you for life
- ♦ Fight or flight? Do you run.... How do you react?
- ♦ Dreams are training to see how you react.

DREAM THEORIES

Filing Cabinet

- ♦ Put new information with appropriate memories
- ♦ Dreams show connection with daily events and past experiences

DREAM THEORIES

Need to forget

- ♦ Whether useless, trivial or too painful - brain gets rid of information
- ♦ Dreams have insight in to the unconscious mind

DREAM THEORIES

Emotional Check

- ♦ Too much to resolve and deal with during waking hours; therefore, your mind will try to sort through it at night
- ♦ Dreams link awareness and unconsciousness
- ♦ Sigmund Freud believed that dreams expressed wishes, often disguised.

SLEEP AND DREAMS

FREUD'S INTERPRETATION OF DREAMS

- ⦿ Sigmund Freud believed that dreams expressed wishes, often disguised.
- **Manifest Content**
 - **Conscious dream content that is remembered after awakening**
- **Latent Content**
 - **The unconscious, censored meaning of a dream**

DREAM CONTENT



- ♦ Manifest – obvious surface level
 - **Conscious dream content** that is remembered after awakening
- ♦ Latent – underlying meaning
 - **The unconscious, censored meaning of a dream**

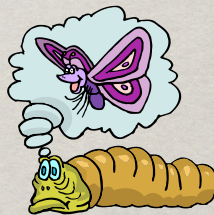
You dream that you have a garden of flowers that are withering, dying & decaying

- ♦ **Manifest** - do you have flowers that need to be taken care of?
- ♦ **Latent** - maybe you just started dating a new person & you have not been paying attention to your best friend. Your friendship may wither if you do not "water" & nurture it

DREAM CONTENT

Steps to analyzing your dreams....

- How did you feel when you woke up?
- check manifest content
- relate it to recent events in your life
- interpret symbols & people
- examine the tone – happy? Scary?
- Pull it together



DREAM CONTENT

- ♦ Reoccurring Dreams
- ♦ Flying
- ♦ Exams
- ♦ Killing/being killed
- ♦ Nudity
- ♦ Various People
- ♦ Nightmares....



SLEEP AND DREAMS

ABOUT WHAT DO PEOPLE DREAM?

- ⦿ Three most common themes are:
 - ⦿ falling, being chased or attacked, repeatedly trying but failing to perform a task
 - ⦿ 64% of dreams are associated with sadness, fear, or anger and aggressive acts outnumbered friendly acts by 2:1
 - ⦿ 18% of dreams were happy or exciting
- **Lucid dreaming**
 - A semiconscious dream state when sleepers are aware that they are dreaming.



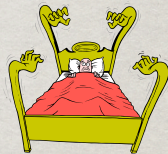
NIGHTMARES

- ♦ a very distressing dream that usually forces at least partial awakening.
- ♦ Disturbing emotions, such as anger, guilt, sadness
- ♦ Most common feelings = fear & anxiety
- ♦ Being Chased!
 - ♦ Adults = by an unknown male
 - ♦ Children = by an animal or some fantasy figure



CAUSES OF NIGHTMARES

- ♦ Physical conditions
- ♦ A traumatic event
- ♦ Stress
- ♦ Drugs/medications,
- ♦ Some people experience frequent nightmares that seem unrelated to their waking lives. (These people tend to be more creative, sensitive, trusting and emotional than average)
- ♦ Children - the struggle to learn to deal with normal childhood fears & problems.



HYPNOSIS

- **Hypnosis**
 - Attention-focusing procedures in which changes in a person's behavior or mental state are suggested.
- **Hypnotic Susceptibility**
 - The extent to which an individual is characteristically responsive to hypnosis.
- **Posthypnotic suggestion**
 - A suggestion made to a subject in hypnosis to be carried out after the induction session has ended.

HYPNOSIS

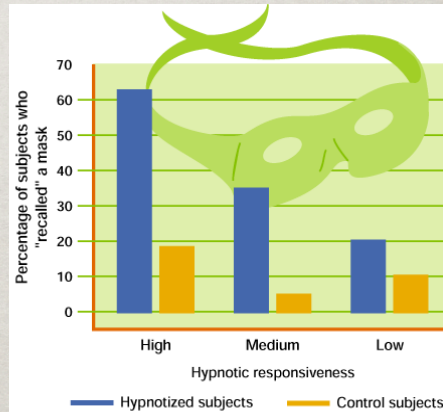
THE MYTHS AND REALITIES

- ⦿ Coercion
 - ⦿ Subjects in hypnosis experiments are aware of what they are doing.
- ⦿ Pain Relief
 - ⦿ Hypnosis can be used to reduce pain in people high in hypnotic responsiveness.
- ⦿ Posthypnotic Suggestion
 - ⦿ Can be used effectively when coupled with psychotherapy.
- ⦿ Memory Enhancement
 - **Hypermnesia:** The unsubstantiated claim that hypnosis can be used to facilitate the retrieval of past memories.

HYPNOSIS

THE MYTHS AND REALITIES *Hypnosis and the Suggestible Eyewitness*

- Participants saw a videotape of a staged bank robbery.
- Half were then hypnotized.
- Interviewer mentioned robber wore a mask.
 - There was no mask.
- In highly hypnotizable subjects, 63% reported a false memory that the robber wore a mask.



HYPNOSIS

IS HYPNOSIS AN “ALTERED” STATE?

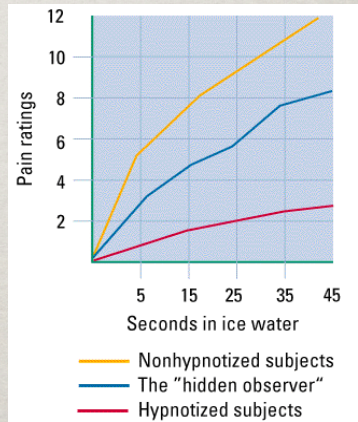
- ⦿ Special-Process theories propose that hypnosis is a unique state of consciousness that facilitates receptivity to suggestion.
- **Dissociation:** A division of consciousness that permits one part of the mind to operate independently of another part.

HYPNOSIS

IS HYPNOSIS AN “ALTERED” STATE?

THE HIDDEN OBSERVER

- ☼ Subjects held a hand in ice water and reported pain.
- ☼ Hypnotized subjects reported lower pain.
- ☼ Hypnotized subjects reported a “hidden observer” that was aware of the pain.



<http://www.youtube.com/watch?v=5Kg-M-rYjmc>

HYPNOSIS

IS HYPNOSIS AN “ALTERED” STATE?

- ☼ Social-Cognitive theories state that hypnosis is not a distinct physiological state and the same phenomena may be seen through relaxation, role playing, etc.

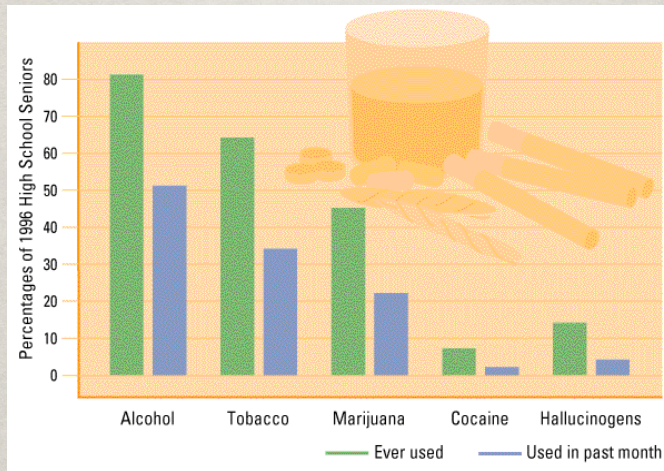
CONSCIOUSNESS- ALTERING DRUGS

- **Psychoactive Drug**
 - A chemical that alters perceptions, thoughts, moods, or behavior.
- **Physical Dependence**
 - An addiction in which a drug is needed to prevent withdrawal.
- **Psychological Dependence**
 - An addiction in which a drug is needed to maintain a sense of well-being.

CONSCIOUSNESS- ALTERING DRUGS TYPES OF DRUGS

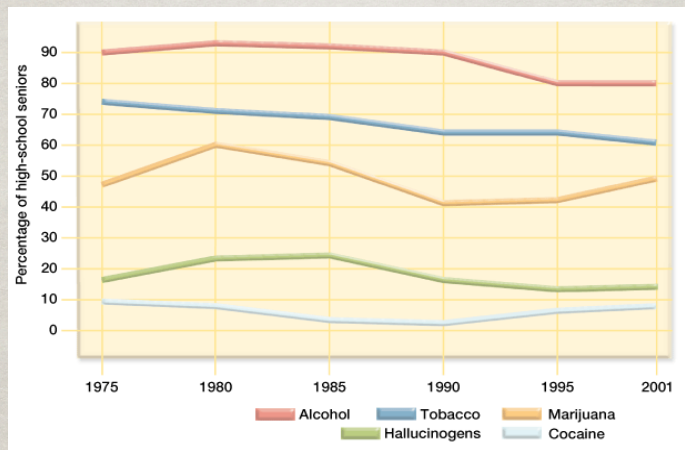
- **Sedatives**
 - Depressants; slow down central nervous system activity
 - Alcohol is a sedative.
- **Stimulants**
 - Excite the central nervous system; energize behavior
- **Hallucinogens**
 - Psychedelic drugs that distort perception and cause hallucinations
- **Opiates**
 - Highly addictive drugs that depress neural activity and provide temporary relief from pain and anxiety

CONSCIOUSNESS-ALTERING DRUGS



CONSCIOUSNESS-ALTERING DRUGS

Changing Patterns of Drug Use, 1975-2001



CONSCIOUSNESS AND CONTROL

☼ Ironic Processes

- ☼ The harder one tries to control a thought or behavior, the less likely one is to succeed, especially if distracted, tired, or under stress.
- ☼ Example, do not think about a white bear.
- ☼ Subjects instructed to control a pendulum moved it more than those not instructed.
- ☼ Golfers were more likely to overshoot a putt when trying not to do so.